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## Big NSF Budget Increase Easily Passes First Hurdles

With science cast as the nation's last hope against the Japanese technological tide, the House, 408-3, has endorsed the Administration's plan for a 17-percent increase, to nearly \$1.9 billion, next year for the National Science Foundation—an outstandingly steep rise in a generally flat federal budget. And there's no serious opposition, apart from chronically frugal Senator William Proxmire (D-Wisc.), to the Administration's vow to raise the NSF budget to \$3.2 billion by 1992, which would be a doubling from last year's budget.

The House vote on NSF was an authorization for fiscal 1988, beginning October 1. The actual appropriation will require a separate vote in the House and matching approval by the Senate. The Senate Labor and Human Resources Committee has also endorsed the budget amount sought by the President, and it's made its own changes here and there in the bill; still to be heard from is the Commerce, Science, and Transporta-

tion Committee, which shares Senate jurisdiction over NSF.

But NSF's prospects are rosy. With Congress stampeding on the issue of competitiveness—and lately going wacky over superconductivity—a vote against science is akin to opposing money for the boys in wartime trenches. At last count, according to a tally at the Congressional Research Service, 25 separate bills have been introduced in this session of Congress on competitiveness, innovation, technology, and related matters.

Superconductivity, which is being depicted as economic penicillin, was the sole subject of a 9:30-5:00, standing-room-only hearing June 10 before the full House Science, Space, and Technology Committee (SS&T). On April 30, superconductivity packed 'em in at an open forum on Capitol Hill sponsored by the Republican Task Force on High Technology and Com-

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## Plenum Withdraws Cancer Book Following Plagiarism Charge

Plenum Press said last week that it was suspending sales of one of its books, *Nutrition and Cancer*, by Raymond J. Shamberger, of the Cleveland Clinic Foundation, because it was not satisfied with his response to charges of extensive plagiarism in the 336-page volume.

Shamberger, a senior researcher who heads the enzymology section at the Clinic, has admitted to filling substantial portions of his book with unattributed near-verbatim borrowings from a 1982 National Academy of Sciences (NAS) report, *Diet, Nutrition, and Cancer*. The Shamberger book, published in 1984, also appears to contain borrowings from a paper published in 1982 in the *Bulletin of the New York Academy of Medicine*. SGR's calls for Shamberger's comment have gone unanswered.

Shamberger's literary borrowings may conceivably turn out to have an innocent explanation, but until the episode is explained, it belongs in the swelling category of dubious behavior that is passively tolerated by the scientific establishment. The Cleveland Clinic, a 1000-bed, diversified medical institution, is renowned as a surgical center, and is occasionally in the news because of its affluent foreign patients. It also has a respectable scientific standing. The Clinic had a research budget last year of \$14.5 million, of which \$7 million was provided by the National Institutes of Health. NIH says Sham-

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## In Brief

The push for Congressional approval of startup funds for the Superconducting Super Collider (SSC) is being slowed by warnings that the \$4-billion particle accelerator would absorb money and talent needed in hot fields of industrial research. A mere \$10 million is all that's being sought at present, but the word at the Department of Energy is that the House Appropriations Committee will deny the request.

Congressmen are also puzzled by assurances that superconducting materials will spawn a new industrial revolution, but that the new materials do not warrant reconsideration of the SSC's design or revision of the construction timetable.

We're getting a raw deal on federal R&D shares, says the St. Paul-based Midwest Technology Development Institute, with members in Illinois, Indiana, Michigan, Minnesota, Nebraska, Ohio, and Wisconsin. The federal government, it says, "spends more than \$20,000 per scientist or engineer in the coastal states and only \$5700 per scientist or engineer in the Midwest."

The Administration's decision to bar Soviet participation in NSF's multinational deep-sea drilling project has drawn an angry protest from Senator Claiborne Pell (D-RI), Chairman of the Foreign Relations Committee. In a statement last week, Pell noted that the Soviets were cleared for joining "until two new participants entered the US decision-making process: a new White House Science Adviser and the Department of Defense."

## ... House Bili Shifts Support to Science Education

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petitiveness. The main theme at both proceedings was that the Administration isn't doing enough to beat the Japanese to the marketplace with products using superconducting materials. Both proceedings featured leading researchers summoned from the frontlines of superconductivity to explain it all to anxious legislators.

The NSF bill that's been passed by the House came out of the SS&T Committee, which authorized the exact amount requested by the White House. The Committee report accompanying the bill linked NSF to competitiveness and patted the Administration for its plan to double the NSF budget. But, reflecting an old tension between the SS&T Committee and the White House, the bill rewrote a portion of the Administration's NSF budget to shift additional funds to science education, a Congressional favorite that has drawn little but grand-standing support from the Reagan White House.

### From Antarctic to the Schools

The bill takes \$25 million from funds proposed by the White House for the Antarctic Program and a total of \$13 million from directorates for mathematics, the physical sciences, engineering, biological, behavioral and social sciences, and geosciences; it reassigns \$35 million to the Science and Engineering Education Directorate and \$3.5 million to the Computer and Information Science and Engineering Directorate. But with the overall NSF budget going up by \$270 million, the losers in this reallocation aren't being hit very hard. The Antarctic Program, with a current budget of \$117 million, was slated by the White House for a \$26 million increase, of which about half was to cover costs of ice-breaker services formerly supplied by the Coast Guard. The Committee didn't explain how NSF's Antarctic contingent is to get along without those services, but, granting only a \$1 million increase for next year's work at the pole, it said that the \$25 million was needed to "augment important programs in science and engineering education which have been neglected in recent years."

Riding the theme that the US excels in science but is weak in commercializing its research, the Committee decreed that at least half of all funds for additions to NSF's program of Engineering Research Centers (ERC) must be for "centers which focus on research relevant to new technologies both for discrete and continuous process manufacturing." NSF, the Committee report stated, "should encourage submittal of proposals for new ERC's which reflect this emphasis on manufacturing research issues."

But, responding to gripes that it has been receiving from individual investigators concerned about the rapid growth of the ERC program (SGR June 1, 1987), the

### Superconductor Superbowl

An invitational "Federal Conference on the Commercial Applications of Superconductivity," with expected attendance of 2000-3000, will be held in Washington July 28-29, White House Science Adviser William R. Graham announced last week.

Graham, appearing before the House Science, Space, and Technology Committee, said the superconducting superbowl would draw a broadly based audience. "We are inviting distinguished representatives of industry, academia, professional trade associations, technical societies, Congress and state and federal government to attend." The meeting, he said, is being held by his office and the Department of Energy, with participation by major government research agencies.

Graham said that "we have witnessed a number of scientific conferences in recent months with enthusiastic participation. We are finding that level of enthusiasm is also rising in the practical applications of these new discoveries, and we intend to strongly stimulate the thoughts and ideas of those in attendance to pursue innovative and marketable applications for high-temperature superconductors."

Committee recommended a cautious approach to expansion. Individual awards, it stated, now comprise "a healthy 60 percent of the NSF research budget. However, the trend at NSF is to increase the number of science and technology centers each year. The Committee is concerned that these programs are being expanded rapidly before the initial centers have been reviewed and before the overall effectiveness of the centers concept has been evaluated."

Noting that none of the centers has been in operation long enough to test the founding concept of other fund-

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## ... Study Ordered of Soviet Prying on Civilian R&D

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ing sources taking over from NSF after five years, the Committee requested a report by November 1 on how NSF plans to evaluate the centers program. It warned, "The Committee will be reluctant to support further expansion of the number of centers in the absence of a detailed plan which will ensure that successful centers may be identified and unsuccessful ones terminated in an orderly way." Also in the bill:

- A provision that the NSF Director, in cooperation with the National Security Council, submit by December 31, 1988, a report "detailing Soviet efforts to penetrate, utilize, and compromise the civilian scientific research programs of the US."

- A requirement that at least one of the Science and Technology Centers planned for fiscal 1988 "be dedicated to the study of information technology and development of model curriculum relevant to instruction in two-year and community colleges." In regard to those institutions, the bill mandates that they are to be "eligible to participate in all NSF programs which address undergraduate science and engineering education." Also that NSF is to send to Congress by next January 1 an "assessment" of their capabilities in science education and what would be required to correct deficiencies.

- A request for a report, by December 1, forecasting

"supercomputer demand for the next five years by the university research community." The Committee told NSF to "describe the procedure that will be used in allocating computer cycles at the NSF national centers after the user saturation point is reached."

- A request for NSF to work with other federal agencies on developing new programs of US-Latin American cooperation in science and technology. Noting that a study of inter-American cooperation is underway at the National Academy of Sciences, the Committee said it also wanted an "independent, inter-agency study" because of "the importance of NSF involvement in international science . . ." It said it wants that study by June 1988.

- A provision to eliminate the requirements that NSF fellowship and traineeship recipients take a loyalty oath and report on any past criminal record. The requirements, written into the 1950 Act that founded NSF, were described by the SS&T Committee report as a useless, costly paperwork burden. The report added that "So far as is known, the remaining requirements are unique to NSF . . . and have no counterparts in student aid programs of other federal agencies." It noted, too, that "These requirements have existed for over 30 years, but no information received as a result of them has changed an award decision."

## White House Assailed as Johnny-Come-Lately on Industry R&D

*Jumping aboard the competitiveness bandwagon, White House Science Adviser William R. Graham assured the House Science, Space, and Technology Committee at the June 10 hearing on superconductivity that the Reagan Administration "has long been leading the country to understand the critical importance of the nation's ability to compete in an increasingly global marketplace." His statement, which focused on cooperation among industry, government, and universities, drew the following outburst from a usually low-keyed member of the Committee, Rep. Doug Walgren (D-Pa.), who chairs the Subcommittee on Science, Research and Technology.*

I confess to some frustration . . . over the points that have been made . . . Your predecessor [as White House Science Adviser] had a great deal of trouble with this Administration when it came to trying to put in place the sorts of cooperative and consortium efforts in research. I think in particular of the steel research and development program that we tried in this committee and that passed in the Congress several years running, and that ran into blanket

opposition. The year after we passed that bill, there was a recommended rescission [by the White House], next year there was a recommended deferral, and this year no money . . .

Here we are, feeling badly because a day is now worth a year, but in 1980, the Congress put in place the centers for cooperative research, under the Stevenson-Wydler [Act], and there was zero money in the philosophy of the Administration for those centers. We passed a robotics bill that was part of the National Bureau of Standards legislation that drew a veto from the Administration on the grounds that it was industrial policy.

It seems that the only time we get something done is when things come to a total collapse . . . I guess I'm expressing a little frustration, because it comes out . . . across the industrial sector where we have simply not been doing the kinds of things where you indicate we have action. From my viewpoint, we have precious little action.

(Graham did not have an opportunity to respond, since Committee Chairman Robert A. Roe, citing a long list of witnesses still to be heard, cut him short).

## ... Admits Using "Extensive Excerpts" from NAS Report

(Continued from page 1)

berger has never been a grantee.

Plenum, a major scientific and technical publisher, told SGR, "We will not sell the book until this is cleared up." But the fact is that Plenum has been very slow to take up the issue, and did nothing about it until an official there heard roundabout that SGR was preparing an article on the subject. Until the announced suspension, the Shamberger book was being sold by Plenum as a respectable contribution to the medical literature, despite protests from at least one researcher and a published corrective note last year to a favorable review that had appeared in the *Journal of the American Medical Association*.

### Favorable Review in JAMA

The JAMA review, of August 9, 1985, described the Shamberger book as "a valuable reference and bibliographic resource for the clinician or researcher in the nutrition oncology area." But on June 13, 1986, following an angry letter from a Cornell University researcher, Professor T. Colin Campbell, who helped write the original NAS report, JAMA published a note. It stated that the Shamberger book "contains large passages similar to two previous publications," and it added that "These sections resemble closely, often verbatim" the publications of the two academies. Nonetheless, the book remained on Plenum's list.

Shamberger, a 52-year-old PhD, has been employed at the Cleveland Clinic since 1969. As an expert witness in a 1985 hearing before the Federal Trade Commission, he acknowledged using large sections of text from the National Academy of Sciences book without any attribution, except on two tables. An unwary reader would have no reason to suspect that large chunks of the book bearing Shamberger's name were lifted from other publications and used without acknowledgement.

Shamberger insisted at the FTC hearing that he was within his rights in using the Academy's text since it was not copyrighted. Furthermore, he claims that he obtained written permission from the Academy to use the materials.

However, he was unable to furnish the claimed permission when Plenum, responding to SGR's inquiries, requested a copy. An Academy official told SGR that "since the [NAS] report was not copyrighted, there is legally no way to punish him for it." Under current NAS policy, it was explained by Virginia B. Martin, head of the National Academy Press, the NAS *Diet, Nutrition, and Cancer* report would have been protected by copyright. Sushma Palmer, Staff Officer for the NAS Food and Nutrition Board, which produced the NAS report,

told SGR, "The Academy's lawyer looked at it [the allegations of plagiarism] and decided it's not worth pursuing."

The Academy's cancer and nutrition report provided one of the first mainstream endorsements of nutrition as an element in cancer promotion and prevention, and, with about 12,000 sales, is one of the top sellers on the NAS book list. Plenum would not disclose sales figures for Shamberger's book.

Shamberger has not responded to allegations about the text borrowed from the *Bulletin of the New York Academy of Medicine* article, "Unproved Dietary Claims in the Treatment of Patients with Cancer," of which Maurice E. Shils, of Memorial Sloan-Kettering was co-author along with Mindy G. Hermann. Shils told SGR that he has heard reports of Shamberger's use of his materials but that he had not looked into the matter.

As in many other recent episodes of dubious scientific conduct, the moving force for exposure was an outraged researcher who, in frustration, brought his concerns to the attention of the press—SGR, in this instance.

### FTC Hearing on Anti-Cancer Pills

Whistle-blowing Professor Campbell, who is the Jacob Gould Schurman Professor of Nutritional Biochemistry at Cornell, says he was alerted to the plagiarism by a postdoctoral fellow in his laboratory, Thomas O'Connor. Campbell, who served on the 14-member committee that produced the NAS report, faced Shamberger as an opposing expert witness at a 1985 Federal Trade Commission hearing. The "respondent" in the case, General Nutrition, Inc., was accused of false and misleading advertising for promoting sales of "Healthy Greens," pills that it claimed might reduce the risk of cancer. Shamberger, citing his book as evidence of his expertise in the field, testified for General Nutrition, while Campbell testified against the company's claim that the NAS report supported its anti-carcinogenic claims for Healthy Greens pills. The Administrative Law Judge in the case ruled against the company, and a consent order is now being prepared.

During the hearing, examination of Shamberger by FTC attorney Brinley H. Williams produced the following colloquy:

Q. Dr. Shamberger, isn't it true that there are considerable excerpts in this book [Shamberger's *Nutrition and Cancer*] from the [Academy's] book on *Diet, Nutrition, and Cancer*?

A. That's true.

Q. Extensive excerpts, isn't that true?

A. In some areas.

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# A Comparison of Texts Confirms Wholesale Borrowings

From the NAS report *Diet, Nutrition, and Cancer* (NAS Press, 1982)

Chapter 14, "Additives and Contaminants," page 14-1: "The use of non-nutritive sweeteners has been studied primarily to determine their relationship to bladder cancer. Results from studies of diabetics did not indicate that there is a direct association between saccharin use and bladder cancer (Armstrong and Doll, 1975; Armstrong et al., 1976 [*British J. Prev. Soc. Med.*]; Kessler, 1970); however, diabetics are not generally representative of the general population in epidemiological studies of cancer incidence and mortality since they differ in several important respects. For example, diabetics as a group smoke less, and since smoking is associated with bladder cancer, less cancer at that site might be anticipated among those subjects (Armstrong and Doll, 1975; Christiansen, 1978)."

Chapter 6, "Protein," page 6-2: "Dietary protein has often been associated with cancers of the breast, endometrium, prostate, colorectum, pancreas, and kidney. However, since the major dietary sources of protein (such as meat) contain a variety of other nutrients and nonnutritive components, the association of protein with cancer at these sites may not be direct, but, rather, could reflect the action of another constituent concurrently present in protein-rich foods."

Chapter 4, "Total Caloric Intake," page 4-1: "A number of factors complicate the interpretation of the effect of caloric intake on cancer incidence. Caloric density can be modified either by modifying the ratio of fat (9.5 kcal/g) to carbohydrate (4.0 kcal/g) or by varying the concentration of nonnutritive bulk (fiber). Since dietary fat and fiber may also affect carcinogenesis, it becomes difficult to measure any independent effect of calories."

"It is also not possible to identify the effect of caloric intake on cancer incidence in studies of humans. Although total caloric intake by two populations can be compared, the interpretation of the data is limited by the same considerations that apply to experiments in animals. It is also difficult to interpret studies in which the prevalence of obesity is compared with cancer incidence."

From Shils and Hermann, "Unproved Dietary Claims in the Treatment of Patients with Cancer," *Bulletin of the New York Academy of Medicine*, April 1982.

"'Detoxification' is supposed to stimulate the liver by ingestion of liver and herb extracts, pancreatic enzymes, and special diets low in animal protein, assisted by periodic fasting. The specific nature of the toxins and the chemical changes in detoxification are not stated. No one has been able to demonstrate the existence of specific 'toxins' as a clinical factor in

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From Raymond J. Shamberger's *Nutrition and Cancer* (Plenum Press, 1984)

Chapter 8, "Additives and Contaminants," page 307: "Nonnutritive sweeteners have been studied mainly to determine their association with bladder cancer. When diabetics were studied, no direct association was found between saccharin use and bladder cancer [reference to Armstrong et al. 1976 article]. However, diabetics may not be representative of the general population in studies of cancer incidence and mortality, since they differ from the general population in several important respects. Diabetics as a group smoke less and, since smoking has been related to bladder cancer, less cancer of the bladder could be anticipated among these subjects [reference to Christiansen, 1978 article]."

Chapter 2, "Macronutrients and Cancer," subheading "Protein," page 70: "Dietary protein has often been associated with cancer of the breast, endometrium, prostate, colorectum, pancreas, and kidney. However, the major dietary sources of protein such as meat contain many other nutrients as well as non-nutritive components. The association of protein with cancer at these sites might not be a direct effect, but could be related to the action of another constituent such as fat, which may also be present in protein-rich food."

Chapter 2, "Macronutrients and Cancer," sub-subheading, "Caloric Intake," page 93: "A number of factors complicate the interpretation of the effect of caloric intake on cancer incidence. Even though this discussion is placed in the carbohydrate section of this chapter, certainly caloric density can be modified either by changing the ratio of fat (9.5 kcal/gm) to carbohydrate (4.0 kcal/gm) or by varying the concentration of nonnutritive bulk (fiber). However, since dietary fat and fiber may also affect carcinogenesis, it is difficult to measure any independent effect of calories."

"In general, it is not possible to identify the effect of caloric intake on cancer incidence in human studies. Although total caloric intake by two populations can be compared, the interpretation of the data is limited. It is also difficult to interpret studies in which the prevalence of obesity is compared with cancer incidence."

Chapter 2, "Unproven Cancer Claims," page 343: "In addition, detoxification is also supposed to stimulate the liver by ingestion of liver and herb extracts, pancreatic enzymes, and special diets low in animal protein, assisted by periodic fasting. The specific nature of the toxins and the chemical changes that occur in detoxification have not been stated. As a clinical factor in human cancer, no one has been able to demonstrate the presence of specific 'toxins.' This preoccupation with 'detoxification' and 'purification' has led to the recommendation that coffee and other enemas be used to cleanse the bowels of toxins. This treatment is not without hazard, as two deaths

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## ... "I Used a Lot of Information from 'Green' Book"

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Q. In some cases, it is, with only very minor editing, verbatim the same, isn't that the truth, Dr. Shamberger?

A. That's true.

Q. And there is no attribution in the book to the [Academy's] *Diet, Nutrition, and Cancer* book, is there, Dr. Shamberger?

A. I don't recall that particular aspect. However, I have permission from the Academy to use information from them when it is in the public interest . . . Their publication can be used in the public interest.

Q. Dr. Shamberger, isn't it true that the only attribution to the [Academy] committee appears with two tables on pages 266 and 315 of your book, *Nutrition and Cancer*? . . .

A. Certainly. Tables and art work you usually cite, if you use a table, all of the table and use the art work, you do cite the source.

Q. Isn't it customary, Dr. Shamberger, when a scientist quotes extensively from another source that the identity of that source is clearly identified?

A. That is a matter of the extent, how much you use.

The FTC attorney then listed the page numbers of substantial sections of the Academy report that appeared verbatim or nearly so in Shamberger's book, noting, for example, that "pages 281 through 301 of your book are nearly verbatim the same as the same subject that appears on pages 234 through 251 of the green book"—a reference to the Academy report's bright green cover.

"It is very likely that they are similar," Shamberger replied.

"What about the section on dietary fibers, pages 107 to 115 of your book, aren't they the same as what appears on pages 130 to 134 of the green book?" the FTC counsel asked.

Replied Shamberger: "Again, two or three of my chapters are similar to the green book."

### Text Comparison

(Continued from page 5)

#### N.Y. Academy of Medicine

human cancer. Preoccupation with 'detoxification' and 'purification' has led to the advocacy of coffee and other enemas to cleanse the bowel of toxins. A recent report cites two deaths following administration of coffee enemas associated with hyponatremia and hypokalemia" [reference to Eisle, Reay, "Death Related to Coffee Enemas," JAMA 244:1608-09, 1980].

#### Shamberger

have been observed after administration of coffee enemas associated with hyponatremia and hypokalemia" [reference to Eisle, Reay, JAMA 1980].

"Aren't they almost verbatim the same, Dr. Shamberger?" the counsel asked.

"I think I did use, I used a lot of information from the green book," Shamberger answered.

The exchange between Shamberger and FTC attorney Williams then took a comic turn on the issue of the claimed reprint permission from the Academy:

Q. From whom did you receive that permission?

A. I don't really recall. It is a letter in my file among 20 other letters receiving permission to use this or that.

Q. Would it have been a Dr. Shusma Palmer that you would have dealt with at the committee, do you recall?

A. It may have been him. It may have been some other executive stating their policy.

Q. Do you know Dr. Palmer, Dr. Shusma Palmer?

A. Yes.

Q. Dr. Palmer is a woman, is she not?

A. Apparently then it is not the one I know.

### 90 Pages

Later in the proceeding, Shamberger denied the FTC attorney's assertion that "approximately 90 pages of your book are taken from the green book in whole or in major part." Whereupon the presiding Administrative Law Judge, Montgomery K. Hyun, interjected: "Just a minute. Dr. Shamberger, would you agree that there are substantial portions in certain chapters in your book which were based on corresponding chapters in the green book and there is substantial textual material which is virtually the same with minor editorial changes."

Shamberger replied: "That is correct."

By coincidence, just a week later—August 9, 1985—JAMA came out with a brief, favorable review of Shamberger's book. Written by Professor Robert B. McGandy, MD, of the Tufts University School of Medicine, the review stated that "unlike the National Academy of Science's *Diet, Nutrition, and Cancer*, Dr. Shamberger's volume offers little evaluation of the extensive citations and does not draw conclusions at the end of the chapters." But in a wrapup sentence, McGandy rated the book "a valuable reference."

Campbell, though in Britain for an academic year as a visiting scholar at Oxford University, kept after the issue, writing to McGandy that the Shamberger book "is the most serious case of plagiarism that I have ever heard about in all my years of research." Describing Shamberger's book "as terribly insulting," Campbell wrote reviewer McGandy: "This is particularly so because he has used that book to justify, in part, his being qualified as an expert in an FTC trial of a nutrient supplement preparation alleged to prevent cancer. He

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## In Print: Instrument Grants, OTA Reports, Directories

The following publications are obtainable as indicated—not from SGR.

From the National Science Foundation, Directorate for Science and Engineering Education, Office of College Science Instrumentation, 1800 G St. NW, Washington, DC 20550; tel. 202/357-9644

**Instrumentation for Undergraduate Science and Engineering Instructional Improvements: Summaries of FY 1985 and FY 1986 College Science Instrumentation Awards** (167 pages, no charge). A detailed report on who got what in the first two years of NSF's program to upgrade college lab equipment. Over the two years, applicants submitted 2272 proposals requesting \$62 million; NSF funded 445 of them for a total of \$10.5 million. The program is limited to awards of between \$5000 and \$50,000 and the grantee institution must at least match the NSF funds.

Two reports by the Congressional Office of Technology Assessment. Copies are available from the Superintendent of Documents, USGPO, Washington, DC 20402; tel. 202/783-3238.

**New Developments in Biotechnology: Public Perceptions of Biotechnology** (GPO Stock No. 052-003-01068-2, 125 pages, \$5.50). Based on a survey it commissioned on public attitudes toward genetic engineering, OTA says that a majority of respondents are interested in biotechnology and feel the benefits outweigh the risks, but OTA also warns that "public consensus could shift if a cataclysmic event were to occur."

**Commercial Newsgathering from Space** (GPO Stock

### Plagiarism

(Continued from page 6)

argues for a supplement; the NAS report does not agree."

McGandy promptly wrote back that he was "absolutely appalled to learn of your allegations," and said he would defer to Campbell on what to do next. Campbell then wrote to JAMA in October 1985; the corrective note did not appear until June 1986.

Meanwhile, Plenum kept the book on the market. Campbell came across it being promoted at the Plenum booth at the March 1987 meeting of the Federation of American Societies for Experimental Biology. A Plenum representative at the booth told the incredulous Campbell that she knew nothing about the book's background, but would inquire. SGR was later told by a spokesperson for the publishing firm that the original editor of the book no longer worked at Plenum and that the files contained nothing about the plagiarism allegations.—DSG

No. 052-003-01066-6, 49 pages, \$6.00). Photography from orbiting satellites could lead to a conflict between national-security interests and the First Amendment rights of an aggressively nosy press, OTA warns, citing use of satellites to cover the Chernobyl disaster and the Iraq-Iran war, and suggestions for a "mediasat." If newsgathering eventually takes to space and is resisted by government, OTA safely predicts, the legal outcome "would turn on the exact nature of the government limitations and the Supreme Court's ultimate determination" of the issue.

From the Institute of Electrical and Electronic Engineers Service Center, 445 Hoes Lane, PO Box 1331, Piscataway, NJ 08855-1331; tel. 201/981-1393

**IEEE US Membership: Salary and Fringe Benefits, Survey 1987, Top 10 Metropolitan Statistical Areas** (107 pages, \$69.95 for IEEE members; \$55.95 for others; add \$5.00 for handling). The average annual income of IEEE's US members in January 1987 was \$53,899; the peaks were in Atlantic City, NJ, (\$68,400) and West Palm Beach, Fla., (\$67,400). Comparing men and women with 11-15 years' experience, IEEE found the men had mean incomes of \$54,100—\$4500 more than the women. The Survey, containing a variety of additional data, is the eighth conducted since 1972 by the IEEE, the world's largest professional society.

Three directories from the Gale Research Co., Book Tower, Detroit, Michigan 48226; tel. 313/961-2242

**Medical Research Centres: A World Directory of Organizations and Programs** (seventh edition, 2 volumes, 1080 pages, \$395.00 per set). Lists 9000 biomedical research facilities—government, academic, private, and others—in 100 countries, with titles, addresses, names of key officials, research topics, budgets, and staff sizes. Also included are government funding agencies, and national and international professional associations.

**Scientific and Technical Organizations and Agencies Directory** (second edition, 2 volumes, 1670 pages, \$185.00 per set, available in July). Lists, with the above-mentioned details, some 15,000 US research facilities, government agencies, and professional associations involved with the physical sciences, engineering, and technology, plus some coverage of Canada and international R&D organizations.

**Encyclopedia of Governmental Advisory Organizations** (sixth edition, 1207 pages, \$450.00, available in August). Lists 5400 government advisory groups, with membership, functions, staff, telephone numbers, etc., in agriculture, economics, industry, labor, defense, education, environment, health, science and technology, international affairs, and transportation.

## DOD Official Charges Industry Neglect of Basic Science

*The following is from a talk by Ted G. Berlincourt, Defense Department Director of Research and Laboratory Management, to an NSF-sponsored conference on Industrial Science and Technological Innovation, May 17-19 in Atlanta. Berlincourt is responsible for DOD policy concerning basic-research support in universities and defense facilities. Until last year, he was director of physics for the Office of Naval Research.*

... industry's participation in basic research has been seriously eroded over the past 20 years as business has focused more and more on near-term payoff to the detriment of long-term strategy. I recognize there are some happy exceptions to this dreary circumstance, for example, in the fledgling biomolecular engineering industry. But overall, the picture's not reassuring. With little industrial participation in basic research, there should be great concern over the ability of industry to recognize, understand, and exploit basic research advances which occur in universities and government laboratories.

It's not easy to identify a reliable measure of how well industry is doing in this area. But there's one which I... chose to cite. Physicists will agree that *Physical Review Letters* is the toniest, most prestigious physics journal. It provides very rapid dissemination of the most exciting new advances in physics to a broad international audience.

Each year about 1000 articles survive the merciless scrutiny of hypercritical referees and ultimately appear in print. Foreign researchers account for about 400 of these, even though it's *our* journal. United States universities account for another 400. In 1980, United States industrial firms accounted for only about 75, but that tells only part of the story...

Bell Telephone Laboratories and IBM together

accounted for 55 of these US industrial papers, and the rest of US industry produced only 20. So, aside from Bell and IBM, US industry just isn't participating at what, in my opinion, is a healthy level. After an encouraging build-up in the sixties, there was a drop-off, even at Bell and IBM. Indeed, recent newspaper articles have even questioned the worth of the laboratory that ushered in the transistor age. How's this for irony?

But we haven't lost faith. We can cite a very recent impressive example of the power of industrial basic research, viz., the spectacular advance in high-temperature superconductivity achieved at IBM Zurich. Although, in light of IBM's abandonment of superconducting electronics a few years ago, it's perhaps no accident that this stellar advance took place 4000 miles from corporate headquarters. In any event, as a nation, we'd be well advised not to place all of our industrial eggs into only two baskets, Bell and IBM...

While support of university research by industry is indeed commendable, it's nonetheless a little like taking a mistress. It can be argued that industry, after divorcing itself from basic research back in the late sixties, is playing the field and really isn't ready to make a commitment to a second marriage with basic research by going so far as to embrace it within its own in-house laboratories...

Many have attributed the large DOD dropoff [in support of basic research] to the Mansfield Amendment. But in my view, the Mansfield Amendment was only a single facet of a much larger movement in government and industry away from the risk of long-range research. This movement appears, in turn, to have been symptomatic of a still more general tendency in broad terms of our nation's endeavors to focus on short-range solutions and, in doing so, to sacrifice long-range capability.

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